USAWC STRATEGY RESEARCH PROJECT

GROUND-BASED MISSILE DEFENSE (NATIONAL MISSILE DEFENSE): IS IT FEASIBLE

by

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ABSTRACT

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This strategic research paper explores the viability of a national missile defense system designed to defend the United States against ballistic missile attack. It explores the question of whether national missile defense is feasible. To answer this question, the paper examines the ballistic missile threat to United States posed by Russia, China, North Korea and Iran. Next, the paper examines the technological challenges involved in developing and fielding a national missile defense system. It also looks at the costs of fielding and maintaining a national missile defense system. And finally, the paper examines geopolitical ramifications of fielding a national missile defense system. It studies potential reactions by Russian, China, India, Pakistan, Japan, South Korea, Taiwan, and NATO and European reactions. After discussing these issues, the paper offers an alternative to the current United States missile defense policy and national missile defense plan.

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GROUND-BASED MISSILE DEFENSE (NATIONAL MISSILE DEFENSE): IS IT FEASIBLE

The United States' pursuit of national missile defense to protect the country from limited attacks with weapons of mass destruction delivered by ballistic missile is one of the most controversial American military initiatives of recent times. The debate began during the Clinton administration when Congress passed the National Missile Defense Act which states, "It is the policy of the United States to deploy as soon as technologically possible an effective national missile defense system capable of defending the territory of the United States against limited ballistic missile attack (whether accidental, unauthorized, or deliberate) with funding subject to the annual authorization of appropriations and annual appropriation funds for national missile defense."[1] In the December 2000 White House National Security Strategy, President Clinton stated that he was "committed to the development of a limited national missile defense system designed to counter the emerging ballistic missile threat from states that threaten international peace and security."[2] This debate continued when President Bush took office. On May 1, 2001, President Bush strongly expressed his national missile defense intentions during a speech at the National Defense University, where he "declared his intention to assure Americans an effective defense against ballistic missile attack." Additionally, on December 13, 2001, President Bush announced the United States would withdraw from the bilateral Anti-Ballistic Missile (ABM) Treaty in six months clearing the way to build and field a national missile defense system.[3]

Despite the stated United States policy on national missile defense and stated objectives, the debate continues to rage. This is due to in large part to the ongoing concerns surrounding the threat, technology, costs, and geopolitical implications of deploying a national missile defense capability. This paper explores each of these concerns and provides a recommendation as to the way ahead.

WHAT IS NATIONAL MISSILE DEFENSE?

> "The fundamental purpose of any American NMD effort would be to build a system that can defend the United States and its allies against attack by hostile emerging ballistic missile states, which in practical terms means small attacks of nor more than a couple of dozen missiles lacking sophisticated countermeasures".
>
> —Jeffrey Scott Larkin

In December 2001, The Missile Defense Agency (MDA), formerly known as the Ballistic Missile Defense Organization (BMDO), was tasked by Department of Defense to build a ballistic

missile defense system capable of defending the United States against a limited ballistic missile attack. Specifically, MDA was task to "**develop and field an integrated ballistic missile defense system capable of providing a layered defense for the homeland, deployed forces, friends, and allies against ballistic missiles of all ranges in all phases of flight."** [4] This system will use complementary interceptors, sensors, and battle management command and control systems, to engage all classes and ranges of ballistic missile threats during boost, midcourse, and terminal phases of flight.

MDA's approach to developing a ballistic missile defense system is divided into three segments. First is the Boost Defense Segment (BDS). The mission of BDS is to define and develop boost phase intercept (BPI) missile defense capabilities. There are four principal objectives for the BDS: First, it will seek to demonstrate and make available the Airborne Laser (ABL). Second, it will define and evolve space-based and sea-based kinetic energy Boost Phase Intercept (BPI) concepts within the next two to four years. Third, BDS will execute a proof-of-concept Space-Based Interceptor Experiment (SBX). Fourth, the BDS will also continue Space-Based Laser (SBL) risk reduction on a path to a proof-of-concept SBL Integrated Flight Experiment (SBL-IFX) in 2012.

The next segment is the Midcourse Defense Segment (MDS), National Missile Defense. It is composed of the Ground-based Midcourse Defense (GMD) System Program and the Sea-Based Midcourse Defense (SBMD) System. SBMD is the successor to the Navy's Theater-wide Missile Systems Program. It is based on the AEGIS platform and is designed to intercept hostile missiles during the ascent phase.

Last is the Terminal Defense Segment (TDS). The goal of this segment is to conduct research and development on systems that engage and negate ballistic missiles in the terminal phase of their trajectory. Primary programs are the Theater High Altitude Area Defense (THAAD) system, Israeli Arrow, PATRIOT PAC-3 and the Medium Extended Air Defense System (MEADS), the follow-on to PATRIOT.

On December 17, 2002, the President directed the Department of Defense to field an initial missile defense capability beginning in 2004. The planned system is composed of six distinct parts, all of which must function perfectly if the system is to succeed. These elements include:

Satellites: Satellites will provide the first warning of ballistic missile launch and an early estimate of the missile's predicted impact point. The Defense Support Program (DSP) satellites will compose the initial system. DSP satellites are scheduled to be replaced starting in 2006 or 2007 by a Space-Based Infrared System-High (SIBRS-HIGH) constellation of five

geosynchronous satellites. Another system Space Tracking and Surveillance Systems (STSS) is being developed to provide global tracking of ballistic missiles and potentially assist with discerning threatening versus non-threatening objects. STSS will also provide coverage to gaps in satellite coverage and enable earlier launch of interceptors.[5]

Early Warning Radars: Five ground-based early warning radars located in Fylingdales (England), Thule (Greenland, Danish territory), the Alaskan Aleutian Islands, Massachusetts and coastal California will receive the initial tracking data from DSP or SIBRs-High through the system's command and control network. These ultra-high frequency radars will project the flight envelope of the hostile missile's trajectory. The radars are scheduled to be upgraded to enhance their tracking capability, which in turn will improve the data available to plot intercept points.[6]

X-Band Radar: The X-band radar is designed to search for, detect, and track enemy missiles, as well as, determine which objects are warheads and which are decoys or debris. There will be at least four, but possibly as many as nine X-Band (high frequency, short wave length) radars deployed. The first is being built on Shemya Island in the western Aleutian Island of Alaska. Other locations selected as potential sites include the United Kingdom, Greenland, and South Korea.[7]

Ground Based Interceptor: The ground-based interceptor is composed of the interceptor booster and an exoatmospheric kill vehicle. The Missile Defense Agency is constructing a launch site in Fort Greenly, Alaska, as well upgrading facilities in California to install missiles there as well. The plan calls for fielding up to ten interceptors by 2004 an additional ten by 2005 (for a total of twenty), in addition to other assets. Key components of Ground Based Interceptor will include:

- The interceptor booster is a modified three stage commercial "off the shelf" very fast rocket that carries the exoatmospheric kill vehicle (EKV) to close proximity of the planned intercept point. While in flight, the EKV receives updated information on the changing location of the incoming missile and warhead/decoys and passes this information to the booster until separation.
- The EKV whose onboard computer processes updates on the location of the hostile missile after the EKV has separated from the booster. The EKV has a combined optical and infrared (multiple waveband) sensor on board through which it acquires, tracks, and discriminates its target. Using small thrusters, the EKV, which weighs 130 pounds and is 51 inches long, performs terminal maneuvers enabling it to strike

the target and destroy it by kinetic energy. The combined closing speed of the target and the interceptor is 15,00 miles per hour.[8]

Battle Management, Command, Control and Communications (BMC3): The BMC3 network is the heart national missile defense. It links the separate elements, receiving data; analyzing parameters such as speed, trajectory, and impact point of hostile warheads; calculates the optimum intercept point; cues and fires the interceptor; provides updated information to the booster and the EKV; and assesses success and failure of the intercept and, if the latter, repeats the process with one or more additional interceptors. A critical sub-element of BMC3 is the In-flight interceptor communications (IFICS) through which information is sent to the interceptor as it flies toward the target. Five locations have been designated for six to equipment sets, but more may be required.[9]

THE THREAT TO THE UNITED STATES

Presently, there is no immediate national missile defense threat to the United States. Russia and China are the only states with long-range ballistic missiles capable of threatening the United States. Even though North Korea and Iran have a ballistic missile capability, intelligence analysts believe they will not have an ICBM capability until the year 2015 or later. There is no pressing evidence that either will have the ability to launch and ICBM in the near future.

On January 28, 2002, Robert Walpole of the Central Intelligence Agency, stated during Senate Governmental Affairs Committee hearings that "the United States is more likely to be attacked with weapons of mass destruction using non-missile delivery means primarily because such means are less expensive than developing and producing ICBMs, and can be covertly developed and employed to evade retaliation. This method would probably be more reliable, accurate and more effective for disseminating biological agent than ICBMs. It would also avoid missile defenses."[10] Additionally, the National Intelligence Estimate 2002 on ballistic missile threats concludes that the United States is more likely to be attacked by terrorists placing weapons of mass destruction on ships, trucks or airplanes than foreign countries using long-range ballistic missiles.[11]

The greater threat to United States interests, allies and friends is from short-range ballistic missiles (SRBMs) and medium-range ballistic missiles (MRBMs) and their proliferation. These missiles are single stage missiles with ranges of less than 1500 kilometers. Indigenously produced variants of the former Soviet SCUD B and SCUD C missiles are the most common.

North Korea has the most advanced program of the emerging missile states, and it has been willing to sell ballistic missiles and related technologies to countries abroad.[12]

Presently, an imminent ballistic missile threat to the United States homeland could only come from two countries, Russia and China. Both have long-range missiles and nuclear weapons. As stated earlier North Korea and Iran could potentially acquire a long-range missile and nuclear weapons in the next ten to fifteen years.[13]

Russia – Though the scale of the potential threat that Russian long-range missiles pose dwarf's that of any other country, it is highly unlikely that under current international conditions Russia will intentionally attack the United States. Currently, Russia possesses 756 land-based ICBMs equipped with 3540 warheads, as well as, 348 submarine-launched ballistic missiles (SLBM) equipped with 1576 warheads.[14] However, these numbers will likely decrease over the next decade. Under the terms of the second Strategic Arms Reduction Talks (START II) both the United States and Russia have agreed to eliminate land based multiple warhead missiles and to deploy no more than 1750 warheads on SLBMs. Additionally, Russia has agreed to destroy its largest and most destructive land based ICBM, the SS-18. Lack of funding may cause Russia to further cut its strategic arsenal. Russian Defense Minister, Igor Segyev admitted in 1998 that by 2010 Russia would be unable to afford more than 1500 strategic nuclear warheads.[15] Some experts believe that budgetary pressures may force Russia to go to 500 or fewer warheads. "The United States intelligence community also believes that an unauthorized or accidental launch of a Russian strategic missile is highly unlikely so long as current technical and procedural safeguards are in place."[16]

China – Presently, China possesses a small and relatively primitive strategic missile capability. Its nuclear arsenal consists of 20 single-warhead ICBMs and one ballistic missile capable submarine. These missiles are based on 1960s technology and are very inaccurate. United States intelligence analysts believe that by 2015, China will likely have tens of missiles targeted against the United States. For their part, Chinese officials have stated repeatedly they will tie the size and speed of their modernization efforts to what the United States decides to do on missile defense.[17]

North Korea – Among Third world countries hostile to the United States, North Korea has the most advanced ballistic missile program. One of its missiles in development, the TAEPO DONG-2, is assessed to have a range of 4000 to 6000 kilometers. A 6000-kilometer range would be sufficient to strike portions of Alaska and the far western portion of the Hawaiian Island Chain (more than 1000 kilometers west of Honolulu). North Korea is unlikely to obtain the technological capability to develop a longer-range operational inter-continental ballistic missile.[18]

The bigger concern is North Korea's SRBM and MRBM capability. It has developed an impressive arsenal of missiles with varied ranges; the SCUD B and SCUD C with a range 300 and 600 Kilometers respectively (capable of striking anywhere in South Korea), the NO DONG with a range of 1300 Kilometers (capable of striking anywhere in South Korea and nearly all of Japan) and the TAEPO DONG –1 which it tested in October 1998 has an estimated range of 2000 kilometers and is capable of striking all of Japan.[19] North Korea is also a leading exporter of ballistic missiles and missile technology around the world, including regimes in the Middle East, Iran, Yemen, and Pakistan. These exports make up one of the country's leading sources of hard currency, generating an estimated $560 million annually.[20] This SRBM and MRBM capability coupled with the willingness to export the technology abroad poses a significant threat for the Unites States' theater ballistic missile defenses and diplomatic efforts.

Iran – Iran has yet to test a missile potentially capable of intercontinental flight. It has been developing medium-range missiles capable of hitting Israel, Saudi Arabia, and other targets in the Middle East. The current focus is on the Shahab 3, a one-stage missile with an 800-mile range and a one-ton payload capacity. Iran is also working on the Shahab 4, which has an estimated range of 1200 miles, and the Shahab 5, which has range estimated between 1800 and 3300 miles. To put these numbers in perspective, the closest major United States city to Iran is Boston, which is roughly 6000 miles from Teheran.[21] Intelligence estimates concerning the probability that Iran will acquire an ICBM in the next fifteen years vary widely. Some analysts contend the chances are likely before 2010 and very likely before 2015. Others contend there is less than an even chance by 2015.

TECHNICAL FEASIBILITY

> "Missile defense, especially national missile defense, is the most difficult program ever attempted by the Department of Defense."
>
> —Center for Defense Information

Missile defense is a tough challenge, both technically and operationally. The "hit-to-kill" technology required for ground-based midcourse defense is measured in tens of centimeters and microseconds. It is especially challenging for national missile defense because there is very low tolerance for "leakers" (i.e. warheads that slip through the defense).[22] Developing the components of a national missile defense system – hit-to-kill interceptors, seekers, infrared sensors, high-resolution radar, discrimination, and command and control – will require "pushing the state of the art" in many dimensions.[23] Most critically, those subsystems must be integrated into one seamless system of unprecedented scale and complexity that functions with near

perfect reliability.[24] This will require extensive efforts to integrate the system and test it in both laboratory and real-life conditions.

Due to the enormous complexity of national missile defense, there are many who argue that by attempting to deploy the initial elements of the system in 2004 is a “rush to failure.”[25] The primary concerns are the lack of operational testing and testing under unrealistic conditions. “Essential components of the proposed GMD exist only on the drawing board. Others are under construction and have never been tested. Many components that do exist are in early stages of testing and need significant upgrading and testing before being integrated into the deployed system.”[26] Thomas P. Christie, who heads the Pentagon's office Of operational Test and Evaluation, recently expressed concern about the small number of flight tests in the missile defense program and about the relatively simple nature of those tests. Even with two more flight intercept attempts planned this year, Christie doubts that enough information will be available to render much of a judgment about the system's ability to defend the United States against missile attack. Much of the current assessment, he said, will be "based primarily on modeling and simulation" and tests of subsystems, "not end-to-end operational testing of a mature integrated system."[27] This is also the concern with SBIRs-High and SSTR. “SBIRS-High is years behind schedule, with costs mounting and unlikely to be launched by 2007 as planned. SSTS system configuration has yet to be decided, and no operational testing is likely this decade.”[28]

However, despite the daunting technological challenges of making national missile defense work, the greater challenge, many believe, is that the defenses have to work against an enemy who is trying to foil the system. Potentially, missile defense systems are susceptible to countermeasures deployed on enemy ballistic missiles or may have problems distinguishing between a warhead and decoys. The latest National Intelligence Estimate warns, “countries developing ballistic missiles would also develop various responses to United States theater and national defenses. These countries could develop countermeasures by the time they flight test their missiles.”[29] It also states that Russia and China each have developed numerous countermeasures and probably are willing to sell the requisite technology.

The Union of Concerned Scientists and Massachusetts Institute of Technology (MIT) Security Studies Program View of Countermeasures studied three potential countermeasures to determine if they would be effective against a national missile defense system. These countermeasures included submunitions with biological or chemical weapons, nuclear warheads with anti-simulation balloon decoys, and nuclear warheads with cooled shrouds. The findings were that the countermeasures would either significantly degrade the effectiveness of the

defense or make it fail completely. Moreover, these countermeasures would defeat the planned national missile defense even if they were anticipated by the United States.[30]

As stated, missile defense is a daunting task technically. Many doubt that it can be done with hit-to-kill technology, particularly in the midcourse when the vacuum of space allows inexpensive decoys and countermeasures to be effective and makes discrimination extremely difficult. If ballistic missile defense can be done, three key components will be necessary for success: robust risk mitigation, system integration, and testing and evaluation efforts.[31]

- Risk mitigation is the engineering term for reducing the technical risks in the program—that is, the chances that the system will not work as hoped. Program managers try to reduce technical and schedule risks in their program through a variety of methods, including letting alternative technologies or engineering approaches compete with each other so that the best approach will emerge.[32]
- System Integration is ensuring that the individual components of a missile defense system are carefully designed to work together and thoroughly tested together. This can be the most difficult part of an acquisition program.[33]
- Testing and evaluation is the process by which components or systems are tested and the results evaluated to assess progress of design, performance, supportability, etc. [34]

COSTS

Putting a cost figure on national missile defense is difficult. The truth is that no one really knows how much has already been spent on national missile defense. Or how much a deployed system will cost. The major factor that makes it difficult to assign a dollar figure to national missile defense is the uncertainty of the final national missile defense system. The total number and type of components, as well as the sophistication of the threat that the system is designed to defend continue to evolve.[35] These pending decisions will not only drive costs of the production and fielding of the program but also the future manning and maintenance costs. Until these details are finalized, putting a reliable direct cost estimate on the system is impossible.[36]

Additionally, besides the actual direct fielding and follow-on costs of a future system, there is a cost for coordinating and conducting diplomatic negotiations and forums on missile defense with other nations that have occurred and will continue in the foreseeable future. These costs have not been captured nor included in the overall costs. Finally, it is probable that economic assistance will be provided to some states in order to obtain the political blessing of a deployed

system. These two indirect costs, while difficult to calculate, should be included if one is to put and accurate cost on the system.

While the actual cost is not knowable at this time, some have tried to establish an estimate for the system. One such estimate states "the latest Pentagon figures show building and maintaining all the major United States missile defense systems (ground-based, sea-based, and space-based systems) will cost far in access of $100 billion. Exact estimates beyond the $100 Billion have been hard to determine.[37]

GEOPOLITICAL IMPLICATIONS

Despite the extreme projected fiscal costs of national missile defense, the geopolitical costs could be even greater. Russian and Chinese opposition to the national missile defense deployment, especially in light of President Bush's decision to unilaterally abrogate the Anti-Ballistic Missile Treaty, could potentially strain relationships with these two major powers.[38] Even some NATO allies oppose the system, and those that do not, wish the issue would go away. These concerns cannot be trivialized or overlooked. The long-term consequences could lead to weapons proliferation and regional security issues extending from Europe to the Far East.

Russia – Russia views the national missile defense program as a real threat to its nuclear deterrent forces and thus to its national security. Although it cannot prevent the United States' decision to deploy the missile system, Russia could respond by taking steps with relatively little effort that would negate other United States goals and potentially leave the United States less secure. To begin with Russia could retaliate by abrogating other arms control treaties. President Putin himself has vowed that Russia "will withdraw not only from the second Strategic Arms Reduction Talks (START II) Treaty, but from the whole system of treaties on the limitation and control strategic of conventional weapons."[39] The commander of Russia's Strategic Rocket Forces similarly warned that Russia would pull out of the Intermediate-Range Forces (INF) Treaty if the United States proceeded with building a national missile defense system. Russia may even feel compelled to refuse to cooperate on other issues that matter to the United States. It could choose to expand its nuclear and ballistic missile ties to countries such as North Korea and Iran going as far as to sell them countermeasures that could defeat any midcourse United States interceptors.[40]

Perhaps, worst of all, Russia could suspend bilateral programs designed to downsize and secure dilapidated nuclear facilities, increasing the odds that nuclear weapons and nuclear materials could fall into the wrong hands through bribery and theft.[41] Russia maintains a very

large and ready nuclear force. Deploying a national missile defense system would potentially dash any hopes of persuading Russia to reduce the ready or alert status of its nuclear forces to a lower, safer level.[42] In a worst case, if mistrust or rancor became very bad between the United States and Russia, they could even threaten the Nunn-Lugar Cooperative Threat Reduction Program.[43] The Nunn-Lugar Cooperative Threat Reduction Program was designed in 1991 to assist countries of the former Soviet Union with the safe and secure transportation, storage and dismantlement of nuclear, chemical and other weapons.[44]

China – China fears its relatively small missile deterrence could be neutralized by a United States missile defense. This would lead to increased deployments of Chinese strategic weapons. Beijing is well placed to increase it numbers of strategic warheads, as well as to deploy multiple-warhead missiles to overwhelm any national missile defense. The 2000 NIE suggests that the size of China's ICBM force could grow from current levels of 18 to 20 to as many as 200 ICBMs, including the DF041, which is a road and rail mobile solid fuel system. United States experts believe that some incremental modernization of China's missile forces is likely in any event, but that the breadth and scope of these efforts will be determined by United States decisions on national missile defense.

It is also believed that China could begin sharing missile technology with many countries around the word. The deployment of a national missile defense could lead to a reversal of the Chinese decision in 1994 to stop selling M-11 missiles to Pakistan and to abide by the guidelines of the Missile Technology Control Regime (MTCR). The bottom line is, a United States national missile defense will lead China to share more and not less nuclear and missile technology with other states.[45]

United States national missile defense also fuels the perception that Washington is bent on denying China its rightful place in the sun as a rising great power.[46] In Chinese eyes, National Missile defense confirms fears of encirclement and containment. It confirms the expectation that with that plan is a conspiracy aimed at the strategic misdirection of China. It confirms for Beijing that the United States is locked into a zero-sum game with the rest of the world for power and influence. In the words of Ambassador Sha: "the real motive of the United States government is to make use of the country's unrivaled economic and technological might to grab the strategic high ground for the 21st century in both the scientific and military fields, so as to break the existing global strategic balance, seek absolute security for itself, and realize its ambitions for world domination."[47]

Asia (Japan, South Korea and Taiwan) - The attitudes of Asian governments toward national missile defense varies in direct relationship to their ties with the United States. The

closer the relationship, the greater the support. United States' friends, Taiwan, South Korea, and Japan, see national missile defense linked to their own theater missile defense systems against potential adversaries. In the middle are countries like India and Pakistan. Both see some positive, but mostly negative effects of national missile defense on their security. [48]

North Korea – National missile defense receives harsh criticism from Pyongyang. North Korea neither appreciates being the reason for national missile defense, nor does it like being labeled a "rogue", a state sponsor of terrorism or designated as the rationale for national missile defense.[49] Further cross pressuring North Korea is the strange fact that national missile defense gives it diplomatic leverage. If national missile defense is designed to neutralize North Korea's TAEPO DONG - 2, the mere possession of this missile allows them use this to leverage the United States to the negotiating table. This was evidence first in September 1999 and later in October 2003.[50]

India – Three factors have increased India's awareness of the United States' national ballistic missile program. First, China's warning that it would increase its strategic missile capability. This would put pressure on India to do the same in order to maintain its minimum deterrence. India realizes that to do so would induce Pakistan to bolster its missile and nuclear programs in conjunction with Islamabad's traditional military relationship with rival China.[51]

Pakistan – Pakistan sees itself "caught in the middle." Opposing national missile defense, which would please it's security partner, China. However, it would displease the United States whose help is needed in rescheduling $3.3 billion in payments on its nearly $32 billion foreign debt and approving a $280 million International Monetary Fund (MF) loan request.[52] While China's strategic buildup will help check rival India, the Indian build-up could possibly raise tensions between Pakistan and India and lead to a nuclear buildup between the two countries. In addition, the greater the confrontation with India, the more Islamists will champion the struggle to incorporate Muslim Kashmir in Pakistan and instill Islamic law within the enlarged nation.[53] In view of all the potential problems, Pakistan, like India, would like to see the national missile defense go away. [54]

The real truth is there is little support for national missile defense in Asia. China and North Korea remain adamantly opposed and both India and Pakistan fear the potential reactions and consequences of United States national missile defense efforts. "This issue is by no means a dispute between the United States and China," says Chinese Foreign Minister Tang Jiasxuan, "but between the United States and the international community."[55]

NATO and Europe – The United States' pursuit of a national missile defense has given fresh impetus to the European charge that the United States is becoming a rogue superpower.[56]

Increasingly, NATO allies are charging that the United States refuses to play by the same rules as other nations. They see the American intention to deploy national missile defense as further evidence of disturbing proclivities that were in evidence even before the national missile defense dispute arose: unilateralism, isolationism, and excessive foreign interventionism.[57] National missile defense also evokes feelings of impotence vis a vis the United States, insofar as many Europeans believe that they have little power to deflect United States policymakers from a course that is deleterious to European interests. [58]

Of the "big three" (Britain, France and Germany), all share similar views on the implications of national missile defense. However, there are some differences. Britain is the most sympathetic to the United States' point of view.[59] Prime Minister Tony Blair has accepted that there is a growing missile threat. However, the Parliament and Foreign Ministry have adopted a generally negative stance on National Missile Defense. The French, by contrast are the most openly hostile and dismissive of national missile defense. They are concerned that it will ignite a potential arms race in Asia and that it could possible ruin relations with Russia.[60] German officials, though they oppose national missile defense, have refrained from expressing their opposition with the same vehemence as France. More than any other European country, however, Germany is concerned with the effect that missile defenses might have on arms control and East – West relations.[61]

AN ALTERNATIVE

In view of the technical, financial, and geopolitical considerations surrounding national missile defense, I endorse an option recommended by Mr. John Deutch, former United States Deputy Secretary of Defense.

- First, extend the timeline to develop national missile defense. According to intelligence estimates, the ballistic missile threat to the United States is not the most likely threat. Allow the time to thoroughly develop, integrate and test all components of national missile defense prior to deployment.
- Focus on the continued development of theater missile defense systems such as PATRIOT, Medium Extended Air Defense System (MEADS) and the Navy's theater anti-ballistic missile capability to counter the present SRBM and MRBM threat to United States interests, friends and allies.
- Examine the feasibility of fielding Theater High Altitude Air Defense (THAAD) early. This system is much farther along in research and development than national missile defense.

- Examine the feasibility of deploying THAAD to Japan or South Korea to provide a modest boost phase engagement opportunity in response to a North Korean ICBM Launch. Additionally, study the feasibility of forward deploying ground based interceptors and the Navy's sea-based missile defense interceptors in the vicinity of South Korea or Japan. This will provide a significant capability against North Korean ICBM launch.[62]
- Pursue diplomatic efforts to stem the sale of ballistic technology and increase participation in nuclear non-proliferation treaties.

This alternative approach provides greater flexibility to meet theater and national ballistic missile threats as they evolve over time. The theater missile defense proposal would be cheaper and technically less risky than the national missile defense system because systems like PATRIOT and the Navy's theater anti-ballistic missile systems are much further along in development and could be used in the development of a national missile defense. It would allow the United States to continue research and develop then deploy a fully tested and integrated national missile defense capability. Finally it may be more amenable to United States' friends and allies and less likely to prompt adverse responses from Russia and China.

CONCLUSIONS

"There is no need to rush to build an NMD system by mid-decade. Neither the evolution of the threat, the state of technological development, nor the status of missile defense diplomacy warrants haste."[63] The intent of National missile defense is to provide insurance against the failure of diplomacy to stem the proliferation of long-range ballistic missiles, the failure of deterrence, and ineffective conventional counterforce attacks. The question is whether the insurance is worth the cost, given that intentional or accidental attacks are unlikely. Other defense needs are more pressing and adverse Russian or Chinese reactions could have long-term consequences for United States security. National missile defense skeptics also question why missile defenses are needed if the country remains vulnerable to "suitcase bombs," ship carrying nuclear weapons in their cargo bays, cruise missiles launched from ships or submarines off United States shores, and other means of delivery. [64] They suggest the United States instead rely on the time-tested technique of deterrence and diplomacy. In the meantime, research and development on anti-ballistic missile technology should continue with a focus on fielding and improving theater anti-ballistic missiles first and fielding a national missile defense capability as soon as technically, economically and politically feasible.

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ENDNOTES

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